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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/500,106

06/25/2004

Hirohisa Tanaka

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EXAMINER

MERCADO, JULIAN A

ART UNIT

PAPER NUMBER

1745

MAIL DATE

DELIVERY MODE

08/31/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/500,106	Applicant(s) TANAKA ET AL.	
	Examiner Julian Mercado	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 1 and 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11-8-06, 8-25-04, 9-21-04</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The Information Disclosure Statement (IDS) filed on August 25, 2004, November 8, 2006 and September 21, 2004 have been considered by the examiner with the following exception(s):

1. JP 51-10656 cited in the September 21, 2004 IDS has not been considered by the examiner as citation of this document without its accompanying translation, English-language abstract or statement of relevance is not in compliance with MPEP 609.

Applicant is requested to provide any of these related documents for the examiner's consideration.

### ***Claim Objections***

Claims 1 and 3 are objected to because of the following informalities:

1. In claim 1 at line 1, it is suggested to change "A fuel cell which comprises a cell of the fuel cell" to --A fuel cell--.
2. In claim 3 at lines 1-2, it is suggested to change "the compound comprises an element including no carbon" to --the compound comprises no carbon--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by

Reddy et al. (U.S. Pat. 5,084,144).

For claims 1-3, Reddy et al. teaches a fuel cell which comprises a cell of the fuel cell having a proton-shift medium interposed between a fuel-side electrode and an oxygen-side electrode comprising a compound containing at least hydrogen and nitrogen such as hydrazine, which is supplied directly to the fuel-side electrode. See col. 13 line 19 et seq.

For claim 4, the proton-shift medium is a solid polymer electrolyte. See col. 12 line 46 et seq.

For claim 5, in addition to the foregoing, the hydrazine fuel includes water insofar as being in an aqueous solution. See col. 13 line 28.

For claims 6, 8 and 11, the fuel-side electrode includes a hydrophilic catalyst such as Pt black. See col. 6 lines 26-29 and col. 2 line 21 et seq. As to the catalyst being used in a current density zone of less than  $150 \text{ mA/cm}^2$ , this limitation has not been given patentable weight as it is more properly drawn to an intended use limitation which fails to further limit or give patentable scope to the claimed fuel cell.

For claim 7, the catalyst is a micronized metal insofar as having a dimension of  $10 \text{ \AA}$ . See col. 16 line 11. The examiner notes the specification definition of micronized as having a diameter of not more than  $1 \text{ }\mu\text{m}$ .

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9, 10 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reddy et al. (U.S. Pat. 5,084,144) in view of Ito et al. (U.S. Pat. 4,716,087).

The teachings of Reddy et al. are discussed above.

Reddy et al. does not explicitly teach a Rh or Ir catalyst. However, Ito et al. is relied upon to show that all claimed catalysts are well-known and to demonstrate mutual equivalence of Rh or Ir to Pt., and additionally would be an obvious substitution to the skilled artisan because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time the invention was made. See Ito et al. in col. 1 line 33 et seq.

As to the claimed specific surface areas, absent of unexpected results it is asserted that this is an optimizable parameter for a result-effective variable. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) The surface area of the catalyst directly affects its activity. See Ito et al. in col. 1 line 54 et seq. and col. 3 lines 11-38.

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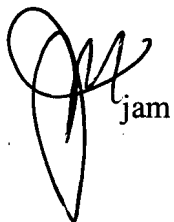
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



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PATRICK JOSEPH RYAN  
SUPERVISORY PATENT EXAMINER